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METHOD AND DEVICE IN DATA NETWORK

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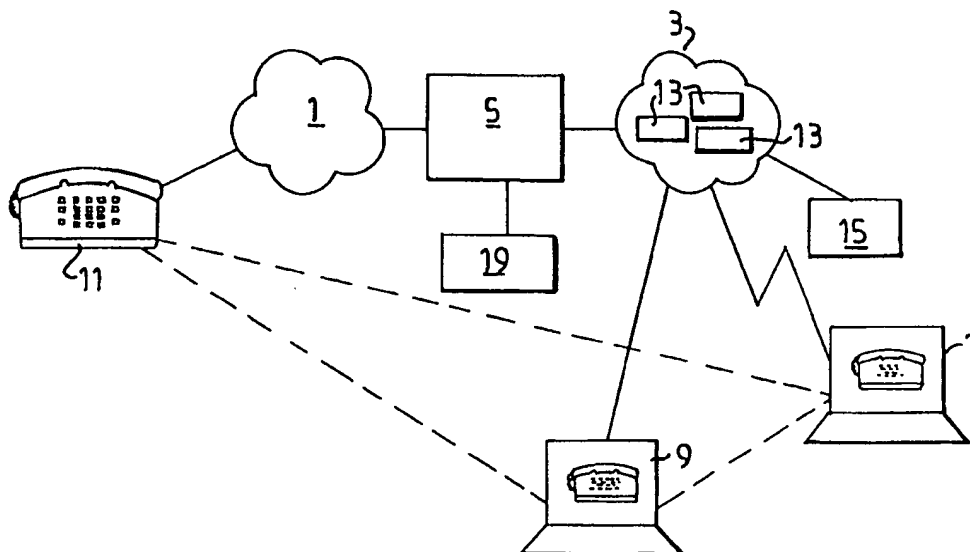
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The present invention relates to a method and an apparatus for making multi-party connections in an Internet Protocol (IP) network. A web page comprises a program, for example a Java applet, connecting the web page to a multi-party conference unit, MCU, in such a way that visitors to the web page will become members of a group meeting handled by the MCU. A voice gateway is used to connect ordinary telephones to the MCU.

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Method and Device in Data Network

Technical Field

The present invention relates to an apparatus for making multi-party connections in
5 an Internet Protocol (IP) network.

Background

In IP networks such as the Internet or corporate networks based on the same
protocols, commonly referred to as Intranets, there is a demand for group
10 communication tools which are easy to use.

A number of off-the-shelf solutions exist, for example, Microsoft Net-meeting,
Communiqué and CU-SeeMe.

All these tools facilitate group communication with some degree of interoperability
15 between different types of clients and are fairly user-friendly. They do not, however,
allow users with ordinary telephones. Also they are not fully integrated with web
pages, in such a way that visiting a web page makes you a member of a group
meeting.

20 The de facto standard for audio and video communication and signalling in an IP
network is H.323. However, in the future this standard may be developed, and new
standards may evolve. Therefore, any solution to these problems should

Summary of the Invention

25 It is an object of the present invention to provide an apparatus to enable group
communication between different kinds of terminals in a telecommunications or data
network, including ordinary telephones.

It is another object of the present invention to enable a user in a telecommunications
30 or data network to join a group meeting by visiting a web page.

It is yet another object of the present invention to provide a telephone which can perform a dial-in through a voice-gateway to be connected as an Internet telephone client in a web conference.

5

These objects are achieved by the present invention by combining a program connecting a multi-party conference unit (MCU) with a web page in such a way that visitors to the web page will become members of a group meeting handled by the MCU. The program must be written in a programming language which enables the
10 programming of interactive HTML applications. One such language available today is Java. A Java program run on the Internet is commonly referred to as a Java applet.

The solution according to the invention offers the following advantages:

- a user-friendly tool for establishing web meetings, which allows the inclusion of
15 ordinary telephones connected through the Public Services Telephone Network (PSTN).

Brief Description of the Drawings

Figure 1 shows a group meeting with three participants according to the invention.

20

Figure 2A is a flow chart of the actions to be taken by a user who wishes to connect to a group meeting according to the invention using a computer.

Figure 2B is a flow chart of the actions to be taken by a user who wishes to connect
25 to a group meeting according to the invention using a telephone.

Figure 3 is a flow chart carried out by the computer program used to establish the group meeting.

Detailed Description of Embodiments

Figure 1 is a schematic drawing of a group meeting according to the invention. The group meeting may be implemented in the Internet or in another IP based network. For simplicity, the network is referred to as the Internet in this document, with the understanding that the invention is not limited to the Internet.

A PSTN network 1 is connected to an IP network 3 via a voice gateway 5. The IP network may be the Internet, a company Intranet or another type of network based on the Internet Protocol. A Personal Computer (PC) 7 is connected through a telephone line via a call-up connection to the IP network 3. Another PC 9 is connected directly to the IP network 3. Other computer types, such as workstations may be connected as well, in similar ways, which are common in the art. To join a group meeting, the computers must have a microphone, and a headset or a loudspeaker. An ordinary telephone 11, connected to the PSTN network 1, may also be used to join the group meeting.

In the IP network, there are a number of web pages 13, to which each of the terminals 7, 9, 11 may connect. One web page 13 is adapted to connect whoever opens the web page to a multi-party conference unit 15.

When a computer user 7, 9 wishes to join a group meeting, he or she opens a standard Internet browser, for example Netscape, or Internet Explorer, and opens a web page 13. This web page 13 contains a computer program 17, which may be transmitted to the user's computer, designed to connect the user to a group meeting set up in the multi-party conference unit 15.

When a telephone user 5 wishes to join a group meeting, he or she dials a telephone number to be connected to the desired web page. The voice gateway 5 looks up the location of the multi-party conference unit 15 in the register unit 19 and establishes the connection this unit 15 through the IP network 3.

A multi-party connection between the three terminals in Figure 1 is indicated by the dotted lines.

- 5 When the connection has been established, the participants may communicate over the Internet. To end the connection, the computer users 7, 9 leave the web page. The telephone users 11 replace the hook on the telephone.

Users may be informed that a web meeting is to take place in a number of different
10 ways, for example by e-mail. Another solution is to store information about web meetings, time and date, and who is to participate, in a web page. This web page may also include the hyperlink to the web page 13 containing the program, for example the Java applet, which will be downloaded to the user's computer 7, 9 and connect the user to the multi-party conference unit 15. Information about ongoing
15 conferences, for example a list of participants, may also be presented on a web page.

Figure 2A is a flow chart of the actions to be taken by a computer user who wishes to join a group meeting according to the invention.

- Step S21: The user opens an Internet browser on the computer. Any Internet
20 browser may be used, for example Netscape or Internet Explorer.
- Step S23: The user opens the web page specified for the meeting. This may be done in different ways. For example all concerned users may be informed about the address of the page by e-mail, or a special web page may be designed to hold information about group meetings and
25 hyperlinks to the appropriate web pages.
- The user is then connected to the group meeting and may participate for as long as he/she likes.
- Step S25: When the user wishes to leave the group meeting, he/she leaves the web page and automatically exits from the meeting.

Figure 2B shows the actions taken when a telephone user wishes to join a group meeting according to the invention.

Step S27: The user dials the telephone number specified for the group meeting.

5 Step S28: The user is connected via the voice gateway to the multi-party conference unit for the meeting.

Step S29: When the user wishes to leave the meeting, he/she hangs up on the telephone in the normal way.

10 Figure 3 shows the actions taken by the computer program when a computer user opens the web page for the group meeting.

Step S31: The program retrieves the user address, that is, the IP address or port number of the user. How to do this is well known in the art.

Step S33: The program connects the user to the multi-party conference unit for the meeting.

15 Step S35: When the user leaves the web page, the connection is automatically ended. This function is comprised as a plug in module in the web page, and is a standard procedure in browsers such as MS Internet Explorer and Netscape.

Claims

1. A method of connecting a participant to a multi-party conference by means of a conference unit (15) in an IP network (3), characterized by the steps of:
 - 5 - registering and identifying each user (5, 7, 9) connecting to the conference unit;
 - connecting each registered user (5, 7, 9) to the multi-party conference.
2. A method according to claim 1, wherein at least one user connects to the conference unit in the following way:
 - 10 - downloading an interactive program to the user's own computer, said program being arranged to connect the computer to a particular conference.
3. A method according to claim 2, wherein the interactive program is downloaded to the user's computer when a particular web page is opened from the user's computer.
 - 15
4. A method according to any one of the claims 1, 2 or 3, wherein ordinary telephones (11) connecting to a voice gateway (5) are connected to the conference.
5. A method according to any one of the claims 1-4, wherein the identities of the parties to the conference are displayed on a web page during the conference.
 - 20
6. A method according to any one of the claims 1-5, wherein information about the conference is shown on a web page prior to the conference.
7. An apparatus for establishing multi-party connections in an IP network (3) to which a number of terminals (7, 9) is connected, characterized by
 - 25 - a multi-party conference unit (15), and
 - a web page (13) comprising a program which will connect any unit (7, 9) that opens the web page (13) to the multi-party conference unit (15).

8. An apparatus according to claim 7, characterized in that the program comprised in the web page is adapted to be downloaded to the unit (7, 9) and executed on this unit automatically.

- 5 9. An apparatus according to claim 7 or 8, characterized by
- at least one voice gateway (5) connecting at least one PSTN network (1) to the IP network (5),
 - at least one telephone (11) connected to the PSTN network (1), and
 - at least one register unit (19) providing information about the location of the multi-
- 10 party conference unit (15) to the voice gateway (5).

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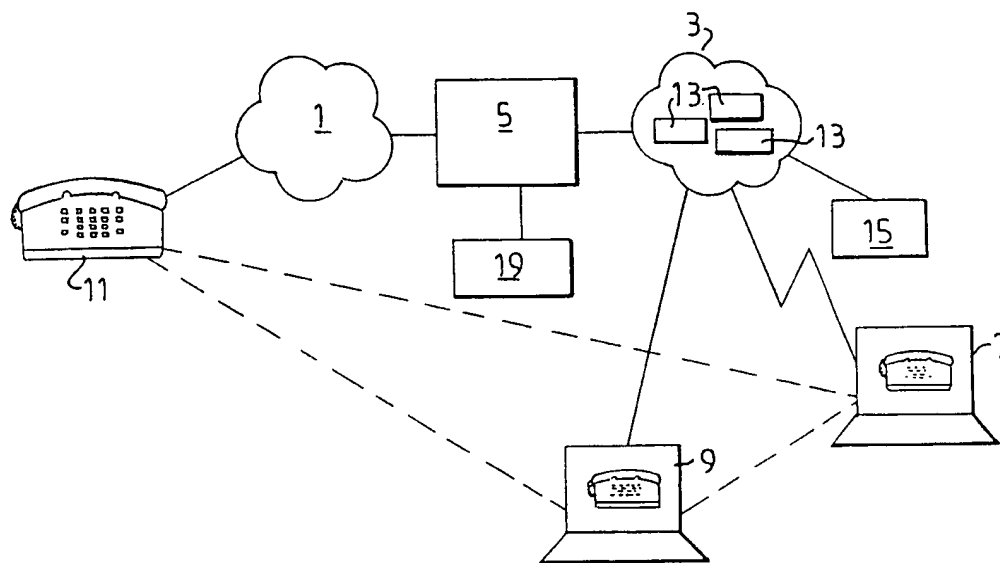


FIG.1

2/2

